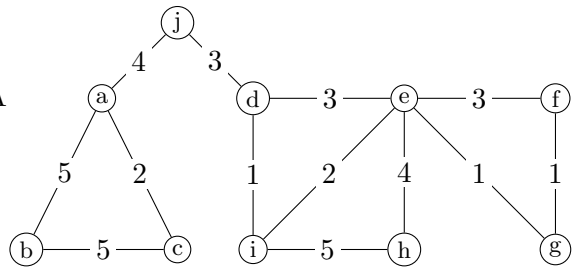
Math F113X: Homework Set 6

- Start with the Problems A and B on minimum cost spanning trees.
- Then complete the *introductory problem* on Euler circuits and paths, Problem C.
- Last, complete the problems from the Graph Theory section:
  # 1, 13,14,15,16, 30, 32, 35a
- Answer the following **reflection question**: What did you learn from checking your homework answers against the provided solutions?

Problem A: Use the drawing of Graph A (in box) to answer the questions.

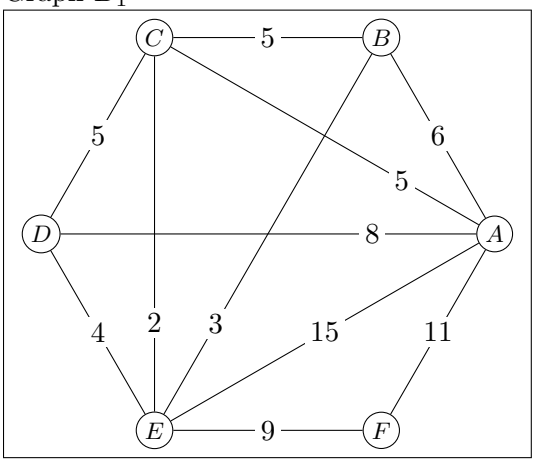
Graph A



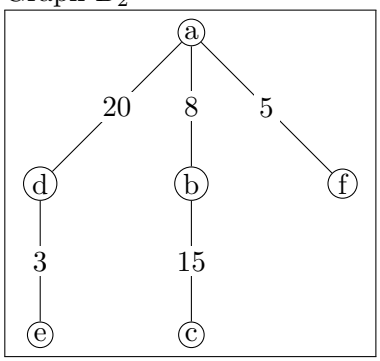
1. Draw two different spanning trees of Graph A.
2. Determine the total weight of each tree from part 1 above.

Problem B: Use Kruskal's Algorithm to find a minimum cost spanning tree in each graph below. Make sure to show appropriate work.

Graph B_1

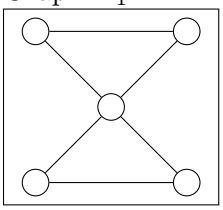


Graph B_2

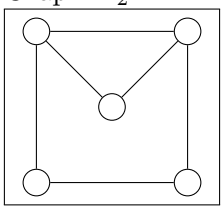


Problem C: For each graph below, determine if it has an Euler circuit, an Euler path, or neither. Justify your answer. Note that you do not need to *find* the Euler circuit or path, only need to determine whether it exists.

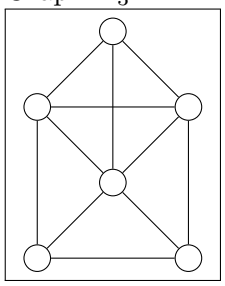
Graph B_1



Graph B_2



Graph B_3



Remember to write up your homework solutions according to the homework writeup guidelines.

Homework is graded using the following rubric for each problem (or problem part):

2 points: You provided a complete answer, with supporting work, written up clearly

1 point: Some attempt at a solution, but incomplete writeup / unclear / illegible / no answer

1 point: Only an answer, with no supporting work

0 points: Missing.

After you do the homework, you need to check your answers against the solutions! Then figure out your errors (if any) and revise your homework before you submit it. Finally, answer the reflection question.

Homework must be submitted on Gradescope.